

IN THE CLAIMS:

1. (Currently Amended) Method for handling a tubular knitted article comprising a first open end defining an elastic edge, a second open end surrounded by a band and which must be closed to form a closed toe of the article, along a closing line having specific orientation with respect to a pocket of fabric of the article; ~~characterized by~~ including the steps of:

- stretching said article over a tubular member so that an intermediate part of the band surrounding said second end is positioned along a line intersecting in two points the end edge of the tubular member and the remaining part is disposed along the outer side surface of the tubular member;
- detecting the angular position of said band on the tubular member; and
- identifying the position of the pocket of fabric on the basis of the angular position of said band with respect to the tubular member.

2. (Currently Amended) Method as claimed in claim 1, ~~characterized by~~ including the steps of:

- determining the angular positions of two portions of said band adjacent to the end edge of the tubular member and disposed on the outer side surface of said tubular member; and
- identifying the angular position of the pocket of fabric in the intermediate area between said two angular positions.

3. (Currently Amended) Method as claimed in claim 2, ~~characterized in that~~ wherein said tubular member is made to rotate about the axis thereof and the angular positions of said two portions of the band are determined during said rotation.

4. (Currently Amended) Method as claimed in ~~one or more of the previous claims~~ claim 1, ~~characterized in that~~ wherein said tubular member has a circular section and in that said intermediate portion of the band surrounding the second end of the article is disposed along a chord of the circumference defined by the end edge of the tubular member.

5. (Currently Amended) Method as claimed in ~~one or more of the previous claims~~, ~~characterized in that the position of said band is detected by means of an optical detection system~~ claim 2, wherein said tubular member has a circular section and in that said intermediate portion of the band surrounding the second end of the article is disposed along a chord of the circumference defined by the end edge of the tubular member.

6. (Currently Amended) Method as claimed in ~~one or more of the previous claims~~, ~~characterized in that the tubular member is disposed in an angular position defined as a function of the position of the pocket of fabric, the tubular article being picked up by the tubular member when~~ claim 3, wherein said tubular member has reached said specific angular position a circular section and in that said intermediate portion of the band surrounding the second end of the article is disposed along a chord of the circumference defined by the end edge of the

tubular member.

7. (Currently Amended) Method as claimed in ~~one or more of the previous claims,~~
~~characterized by the steps of:~~

~~— arranging at least a first sensor at a first distance from the end edge of the~~
~~tubular member;~~

5 ~~— rotating said tubular member and said first sensor with respect to each other~~
~~about the axis of the tubular member with the tubular article inserted over the~~
~~tubular member, until two portions of said band pass in front of said first sensor;~~
~~determining the angular positions of said two portions on the tubular member;~~

~~— identifying the angular position of the pocket of fabric in the intermediate~~
10 ~~angular position between the two angular positions of said two portions of said~~
~~band claim 1, wherein the position of said band is detected by means of an~~
~~optical detection system.~~

8. (Currently Amended) Method as claimed in claim 7, ~~characterized by: arranging a~~
~~second sensor at a second distance from the end edge of~~1~~, wherein the tubular member; and~~
~~discerning between two possible diametrically opposed~~ is disposed in an angular
~~positions~~position defined as a function of said~~the position of the pocket of fabric using the~~
5 ~~combined detection of said two sensors,~~ the tubular article being picked up by the tubular
member when said tubular member has reached said specific angular position.

9. (Currently Amended) Method as claimed in ~~one or more of the previous claims,~~
characterized in that said band surrounding the opening of the second end of the article is of a
different color to the color of the fabric adjacent to said band claim 1, including the steps of:

- arranging at least a first sensor at a first distance from the end edge of the
5 tubular member;
- rotating said tubular member and said first sensor with respect to each other
about the axis of the tubular member with the tubular article inserted over the
tubular member, until two portions of said band pass in front of said first sensor,
determining the angular positions of said two portions on the tubular member;
- 10 - identifying the angular position of the pocket of fabric in the intermediate
angular position between the two angular positions of said two portions of said
band.

10. (Currently Amended) Method as claimed in ~~one or more of the previous claims,~~
characterized in that the beginning and end of the fabric surrounding claim 9, including the steps
of: arranging a second sensor at a second distance from the end edge of the tubular member is
detected at the terminal end of said tubular member; and discerning between two possible
5 diametrically opposed angular positions of said pocket of fabric using the combined detection
of said two sensors.

11. (Currently Amended) Method as claimed in ~~one or more of the previous claims,~~

~~characterized in that the angular position of said band is detected by means of at least one distance sensor; claim 1, wherein said band surrounding the opening of the second end of the article is of a different color to the color of the fabric adjacent to said band.~~

12. (Currently Amended) Method as claimed in ~~one or more of claims 1 to 10;~~ characterized in that the angular position of said band is detected by means of at least one electrical contact cooperating with claim 1, wherein the beginning and end of the fabric surrounding the tubular member is detected at the terminal end of said tubular member.

13. (Currently Amended) Method as claimed in ~~one or more of the previous claims;~~ characterized in that a plurality of sensors are disposed around the axis of said tubular member, in proximity to said end edge of the tubular member, and in that said sensors and said tubular member are rotated reciprocally about the axis of the tubular member, to determine claim 1,
5 wherein the angular position of the said band is detected by means of the article on the tubular member at least one distance sensor.

14. (Currently Amended) Method as claimed in claim 13, characterized by the steps of:
— activating said sensors;
— identifying the sensors closest to the band of the article and facing an area of the tubular member covered by the fabric of the article;
5 — using at least one of said sensors closest to the band of the article, to

~~determine~~1, wherein the angular position of the~~said~~ band ~~on the tubular member~~
~~with a movement of reciprocal rotation between the tubular member and said~~
~~sensors about the axis of the~~is detected by means of at least one electrical
contact cooperating with said tubular member.

15. (Currently Amended) Method as claimed in ~~one or more of the previous claims,~~
~~characterized in that~~claim 1, wherein a plurality of sensors are disposed around the axis of said
tubular member, in proximity to said end edge of the tubular member is rotated together with
~~the article to take said pocket of fabric to a predetermined angular position and in that the~~
5 ~~tubular member is rotated with respect to the article to take,~~ and in that said sensors and said
tubular member are rotated reciprocally about the axis of the tubular member, to a
~~predetermined~~determine the angular position, with ~~of the pocket in a predetermined position~~
~~with respect to~~band of the article of the tubular member.

16. (Currently Amended) ~~A device for handling tubular knitted articles, comprising: a~~
~~tubular member; means to insert a tubular knitted article over the outside of said tubular~~
~~member; tensioning members to tension said tubular article inserted over said tubular member;~~
~~means for angular orientation of the article; a control unit to control the operations of said~~
5 ~~device, characterized in that said control unit is programmed to implement, by means of said~~
~~device, a method~~Method as claimed in one or more of claims 1 to 15: claim 15, including the
steps of:

- activating said sensors;
- identifying the sensors closest to the band of the article and facing an area of the
10 tubular member covered by the fabric of the article;
- using at least one of said sensors closest to the band of the article, to determine
the angular position of the band on the tubular member with a movement of
reciprocal rotation between the tubular member and said sensors about the axis
of the tubular member.

17. (Currently Amended) ~~A device for angular orientation of tubular knitted articles, comprising: a tubular member, means to insert and stretch a tubular knitted article over the outside of said tubular member; a control unit, characterized in that it comprises at least one sensor positionable to the side of~~
5 Method as claimed in claim 1, wherein the tubular member is rotated together with the article to take said pocket of fabric to a predetermined angular position and in that the tubular member is rotated with respect to the article to take said tubular member in proximity to an end edge and capable of recognizing the fabric of the tubular article; an actuator to reciprocally rotate a predetermined angular position, with the pocket in a predetermined position with respect to the tubular member and said at least one sensor about
10 the axis of the tubular member, said control unit being programmed to determine the angular position of the tubular article on the basis of the signal of said sensor.

18. (Currently Amended) ~~Device~~ A device for handling tubular knitted articles,

comprising: a tubular member; means to insert a tubular knitted article over the outside of said tubular member; tensioning members to tension said tubular article inserted over said tubular member; means for angular orientation of the article; a control unit to control the operations of said device, wherein said control unit is programmed to implement, by means of said device, a method as claimed in claim 17, characterized in that said at least one sensor is an optical sensor1.

19. (Currently Amended) ~~Device as claimed in claim 17, characterized in that~~A device for angular orientation of tubular knitted articles, comprising: a tubular member; means to insert and stretch a tubular knitted article over the outside of said tubular member; a control unit; including: at least one sensor positionable to the side of said tubular member in proximity to an end edge and capable of recognizing the fabric of the tubular article; an actuator to reciprocally rotate the tubular member and ~~said at least one sensor is a distance sensor: about the axis of the tubular member; said control unit being programmed to determine the angular position of the tubular article on the basis of the signal of said sensor.~~

20. (Currently Amended) ~~Device as claimed in claim 17~~19, characterized in that~~wherein said at least one sensor comprises an electrical contact cooperating with the tubular member, said tubular member being produced in electrically conductive material, said tubular member and said sensor being disposed in an electric circuit, the contact between the sensor and the tubular member closing said electric circuit to produce a signal~~is an optical sensor.

21. (Currently Amended) Device as claimed in ~~one or more of claims 17 to 20,~~
characterized by a plurality of sensors positionable about the axis of the tubular member. claim
19, wherein said at least one sensor is a distance sensor.

22. (Currently Amended) Device as claimed in claim 21, ~~characterized in that said~~
~~sensors are disposed on a plane essentially orthogonal to the axis of~~19, wherein said at least one
sensor comprises an electrical contact cooperating with the tubular member, said tubular
member being produced in electrically conductive material, said tubular member and said sensor
5 being disposed in an electric circuit, the contact between the sensor and the tubular member
closing said electric circuit to produce a signal.

23. (Currently Amended) Device as claimed in claim 21 or 22, ~~characterized in that said~~
~~control unit is programmed to perform the following steps:~~

- ~~— activate said sensors;~~
- ~~— identify the two sensors closest to the band of the article inserted over~~19,
5 including a plurality of sensors positionable about the axis of the tubular
member and disposed in positions in which the tubular member is covered by the
fabric of the article;
- ~~— use at least one of said two sensors to identify the angular position of the~~
tubular article.

24. (Currently Amended) Device as claimed in ~~one or more of claims 16 to 23,~~
characterized in that it comprises an element to clamp the band surrounding the toe of the
article, to prevent said band from being positioned entirely along the side surface claim 20,
including a plurality of sensors positionable about the axis of the tubular member ~~before~~
5 ~~detection of the toe pocket.~~

25. (Currently Amended) Device as claimed in ~~one or more of claims 17 to 24,~~
characterized in that said at least one sensor is carried by a support coaxial to claim 21, including
a plurality of sensors positionable about the axis of the tubular member, ~~said support and said~~
tubular member being rotatable with respect to each other, and in that disposed on said support
5 ~~is an engaging member of the tubular article, operable to engage the tubular article and cause~~
~~rotation thereof with respect to the tubular member when the support and the tubular member~~
~~rotate with respect to each other.~~

26. (Currently Amended) Device as claimed in ~~one or more of claims 16 to 24,~~
characterized by an engaging member of the tubular article, to hold the tubular article in a
predetermined position ~~while~~ claim 22, including a plurality of sensors positionable about the
axis of the tubular member ~~rotates therewithin, or to rotate the tubular article about the tubular~~
5 ~~member, holding the latter still.~~

27. (Currently Amended) Device as claimed in claim 26, ~~characterized in that it~~

~~comprises at least two stations, said sensor(s) being disposed in a first station and said engaging member~~19, wherein said sensors are disposed on a plane essentially orthogonal to the axis of the tubular article being disposed in a second station~~member.~~

28. (New) Device as claimed in claim 19, wherein said control unit is programmed to perform the following steps:

- activate said sensors;
- identify the two sensors closest to the band of the article inserted over the tubular member and disposed in positions in which the tubular member is covered by the fabric of the article;
- use at least one of said two sensors to identify the angular position of the tubular article.

29. (New) Device as claimed in claim 19, including an element to clamp the band surrounding the toe of the article, to prevent said band from being positioned entirely along the side surface of the tubular member before detection of the toe pocket.

30. (New) Device as claimed in claim 17, wherein said at least one sensor is carried by a support coaxial to the tubular member, said support and said tubular member being rotatable with respect to each other, and in that disposed on said support is an engaging member of the tubular article, operable to engage the tubular article and cause rotation thereof with respect

to the tubular member when the support and the tubular member rotate with respect to each other.

31. (New) Device as claimed in claim 19, including an engaging member of the tubular article, to hold the tubular article in a predetermined position while the tubular member rotates therewithin, or to rotate the tubular article about the tubular member, holding the latter still.

32. (New) Device as claimed in claim 31, including at least two stations, said sensor(s) being disposed in a first station and said engaging member of the tubular article being disposed in a second station.